cyclic compounds - a fact which is acknowledged by the Examiner in the Office Action of August 13, 2001 (paper No. 8), page 4, lines 9-10. As such, the Ng patent does not render the amended claims obvious.

CONCLUSION

For the above reasons, Applicants respectfully submit that all pending claims, *i.e.*, claims 1, 2, 11 - 14, and 23 - 37, are patentable over the prior art. Applicants have addressed all of the Examiner's rejections. In conjunction with the claim amendments and arguments above, Applicants believe that the claims are now in condition for allowance and respectfully request that the Examiner grant such an action. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the number noted below.

No fees are due as a result of this Reply. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 10-0447, reference 42053.6USPT(BAI)

Respectfully submitted,

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Date: September 24, 2001

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APPENDIX A

MARKED UP SET OF CLAIMS PER AMENDMENT
U.S. APPLICATION SERIAL NO. 09/534,282

1. (Twice Amended) A magnetic recording medium, comprising:

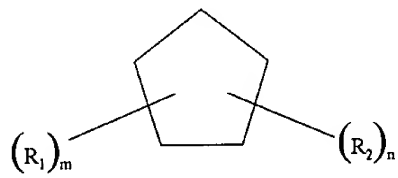
a non-magnetic support;

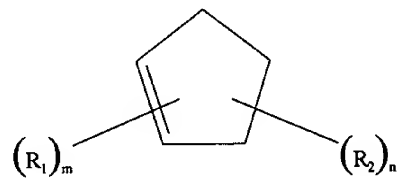
a magnetic layer formed on the support; and

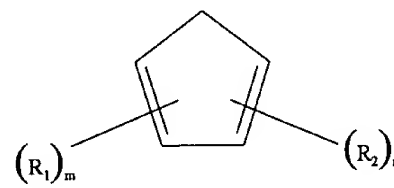
a lubricant layer over the magnetic layer, the lubricant layer including a compound selected from the group consisting of hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, hydrocarbyl-substituted cyclopentadiene, and mixtures thereof; and

wherein the hydrocarbyl consists of carbon and hydrogen.

2. (Twice Amended) The magnetic recording medium of claim 1, wherein the lubricant layer includes a hydrocarbyl-substituted cyclopentane, a hydrocarbyl-substituted cyclopentene, or a hydrocarbyl-substituted cyclopentadiene as represented by the following respective formulas:



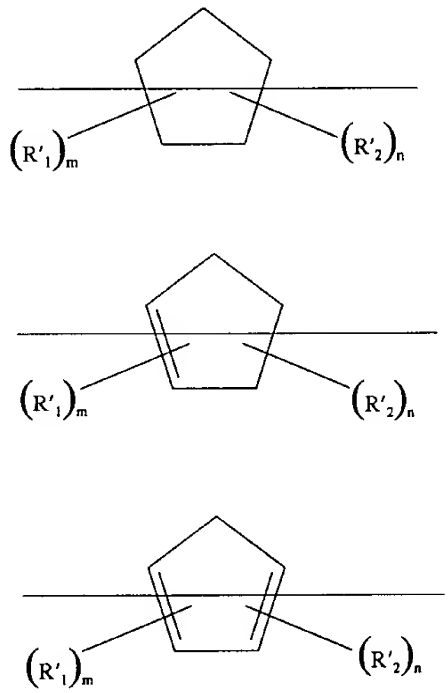




wherein R_1 and R_2 are respectively a hydrocarbyl group, and m and n are respectively zero or a positive integer and the sum of m + n is greater than zero; and

wherein the hydrocarbyl consists of carbon and hydrogen.

3. (Deleted) ~~The magnetic recording medium of claim 1, wherein the lubricant layer includes a hydrocarbyl-substituted cyclopentane, a hydrocarbyl-substituted cyclopentene, or a hydrocarbyl-substituted cyclopentadiene as represented by the following respective formulas:~~

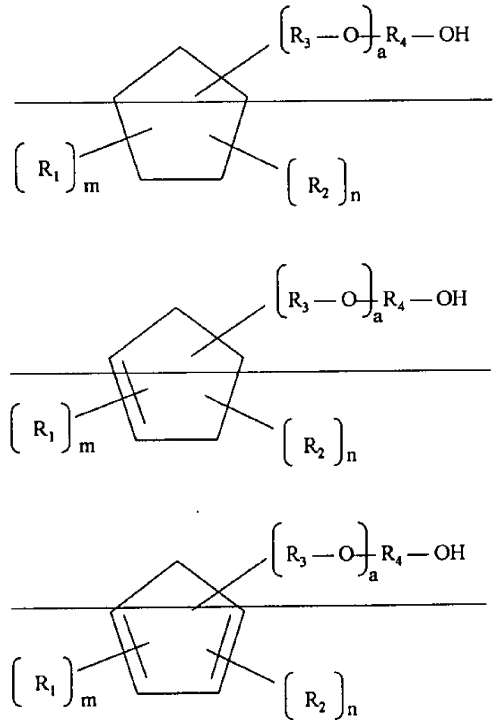


~~wherein R'_1 and R'_2 are respectively a functionalized hydrocarbyl group which includes a functional group selected from -OH, $-NH_2$, carboxylic acid, carboxylic ester, phenolic ester, polyether, amide, amine, sulfonamide, thiophosphate, and phosphate, and m and n are respectively zero or a positive integer and the sum of m + n is greater than zero.~~

4. (Deleted) ~~The magnetic recording medium of claim 1, wherein the hydrocarbyl-substituted~~

~~cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene include at least one functional group selected from the group consisting of hydroxy, carboxylic acid, amine, carboxylic ester, carboxylic amide, phosphate, and sulfur-containing groups.~~

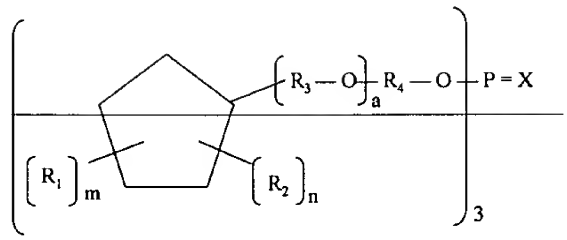
5. (Deleted) ~~The magnetic recording medium of claim 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

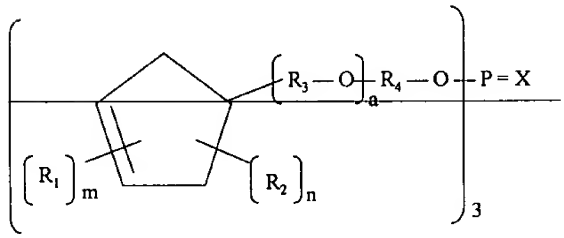


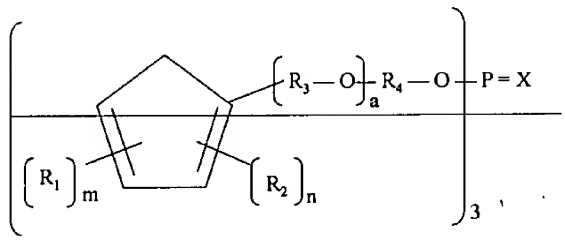
~~wherein a is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, R_3, and R_4 are individually a hydrocarbyl group~~.

6. (Deleted) ~~The magnetic recording medium of claim 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas~~:

APPENDIX A



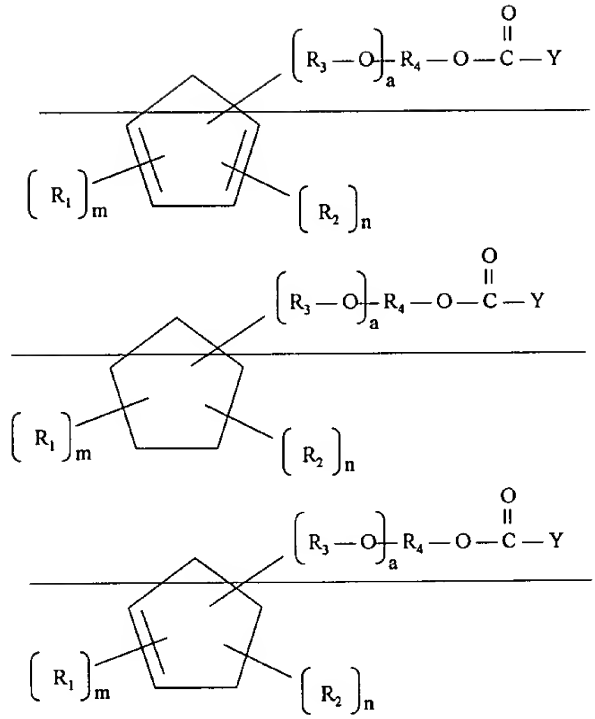




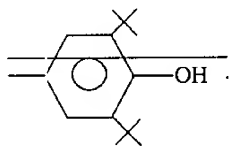
~~wherein a is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, R_3, and R_4 are individually a hydrocarbyl group; X is either oxygen or sulfur~~.

7. (Deleted) ~~The magnetic recording medium of claim 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

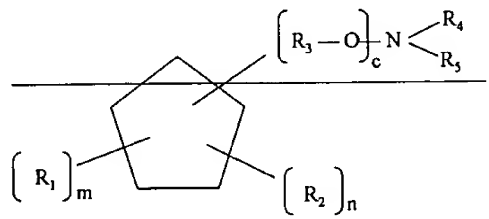
APPENDIX A



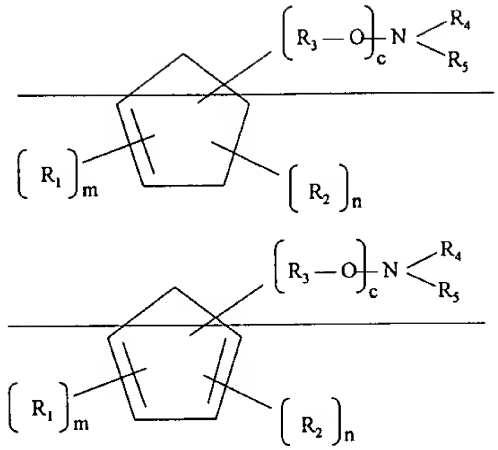
~~wherein a is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, R_3, and R_4 are individually a hydrocarbyl group; Y is -OH, $-NH_2$, or~~



8. (Deleted) ~~The magnetic recording medium of claim 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

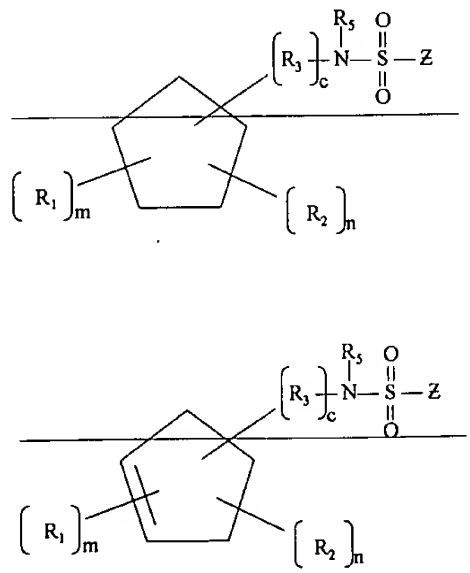


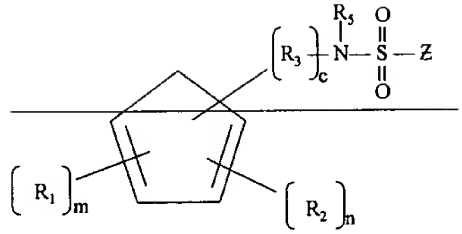
APPENDIX A



~~wherein c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer, R_1, R_2, and R_3 are individually a hydrocarbyl group; R_4 and R_5 individually are hydrogen or hydrocarbyl~~.

9. (Deleted) ~~The magnetic recording medium of claim 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene cyclopentadiene are represented by the following respective formulas:~~

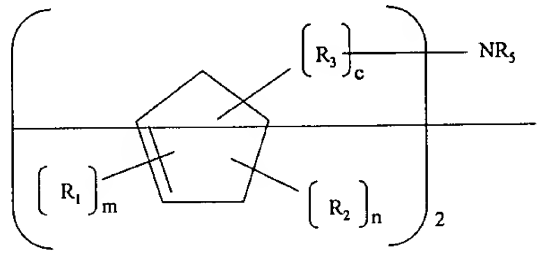


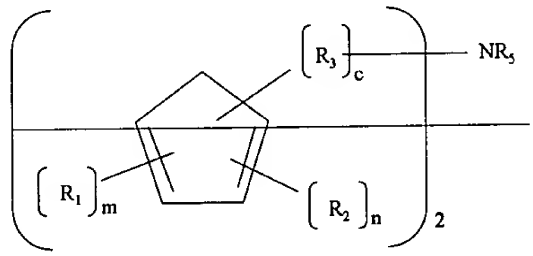


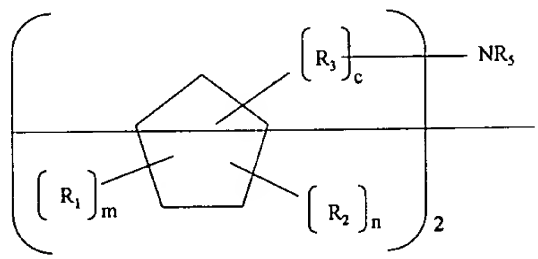
APPENDIX A

~~wherein c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, are individually a hydrocarbyl group; R_5 is hydrogen or hydrocarbyl; Z is hydrocarbyl.~~

10. (Deleted) ~~The magnetic recording medium of claim 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

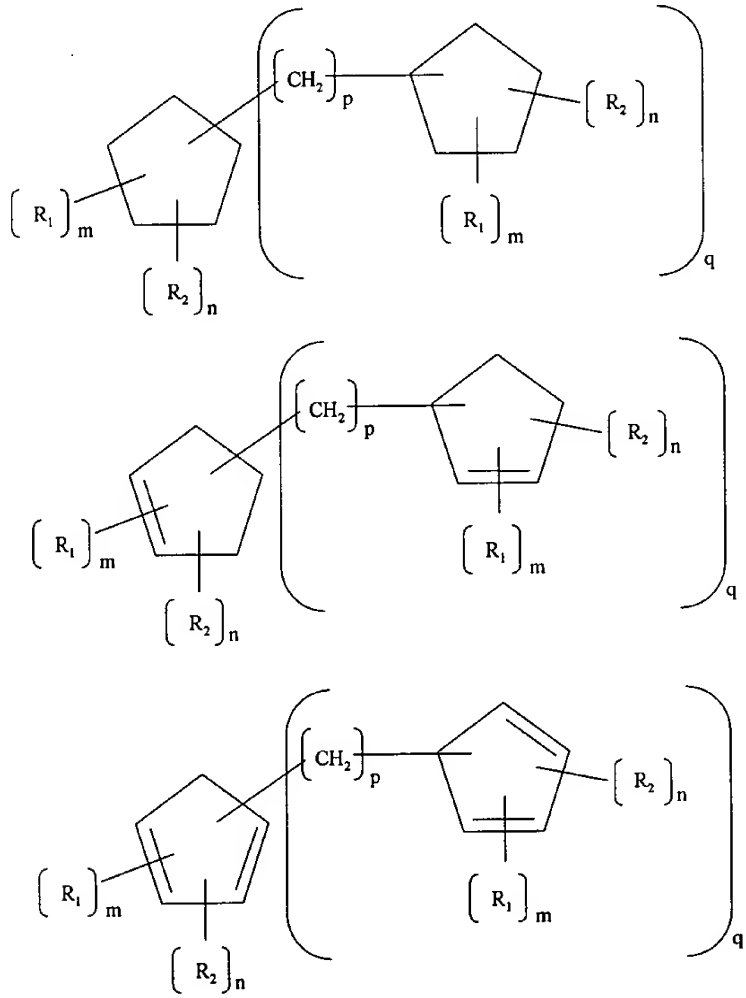






~~wherein c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, and R_3 are individually a hydrocarbyl group; R_5 is hydrogen or hydrocarbyl.~~

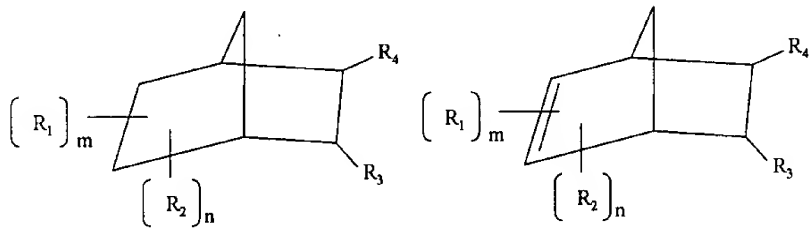
11. (Twice Amended) The magnetic recording medium of claim 1 4, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:



wherein p is 1, 2, 3, ..., or 10; q is 1, 2, 3, ..., or 10; m and n are zero or a positive integer; R_1 and R_2 are individually a hydrocarbyl group; and

wherein the hydrocarbyl consists of carbon and hydrogen.

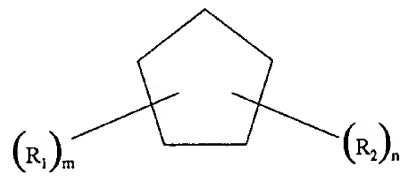
12. (Twice Amended) The magnetic recording medium of claim 1 ~~4~~, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:

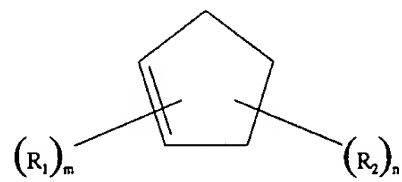


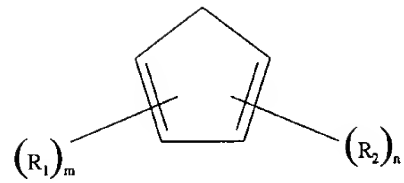
wherein m and n are zero or a positive integers; R_1 and R_2 individually are a hydrocarbyl group; R_3 and R_4 individually are hydrocarbyl; ~~hydroxy, nitrile, carboxylic acid, carboxylic amide, or carboxylic ester~~ and

wherein the hydrocarbyl consists of carbon and hydrogen.

14. (Twice Amended) The magnetic recording medium of claim 13, wherein the lubricant layer includes a hydrocarbyl-substituted cyclopentane, a hydrocarbyl-substituted cyclopentene, or a hydrocarbyl-substituted cyclopentadiene as represented by the following respective formulas:



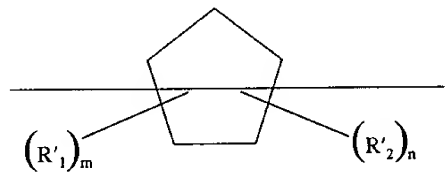


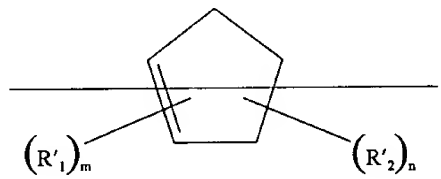


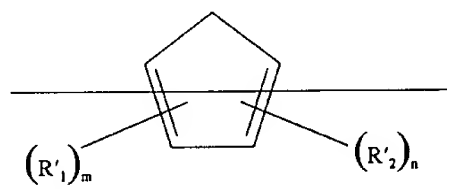
wherein R_1 and R_2 are respectively a hydrocarbyl group, and m and n are respectively zero or a positive integer and the sum of m + n is greater than zero; and

wherein the hydrocarbyl consists of carbon and hydrogen.

15. (Deleted) ~~The magnetic recording medium of claim 13, wherein the lubricant layer includes a hydrocarbyl-substituted cyclopentane, a hydrocarbyl-substituted cyclopentene, or a hydrocarbyl-substituted cyclopentadiene as represented by the following respective formulas:~~



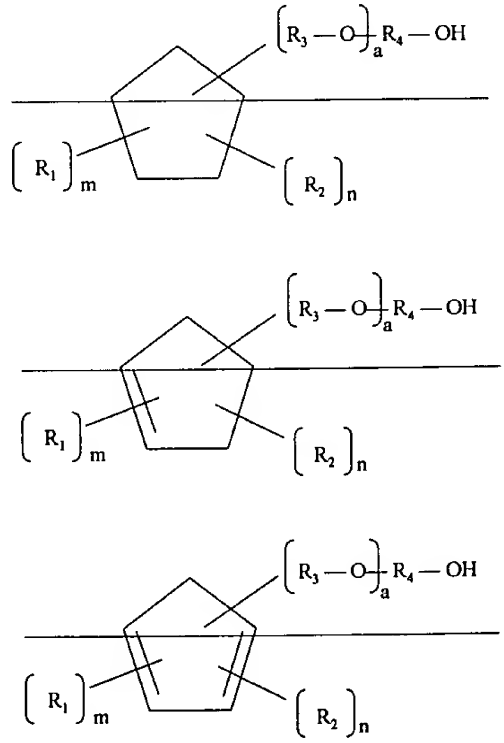




~~wherein R'_1 and R'_2 are respectively a functionalized hydrocarbyl group which includes a functional group selected from -OH, $-NH_2$, carboxylic acid, carboxylic ester, phenolic ester, polyether, amide, amine, sulfonamide, thiophosphate, and phosphate, and m and n are respectively zero or a positive integer and the sum of m + n is greater than zero.~~

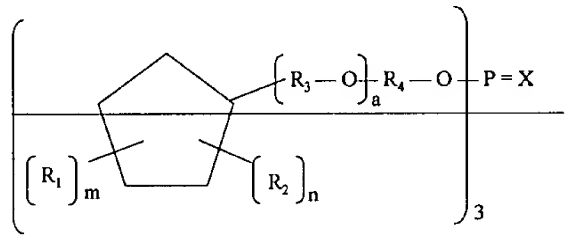
16. (Deleted) ~~The magnetic recording medium of claim 13, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene include at least one functional group selected from the group consisting of hydroxy, carboxylic acid, amine, carboxylic ester, carboxylic amide, phosphate, and sulfur-containing groups.~~

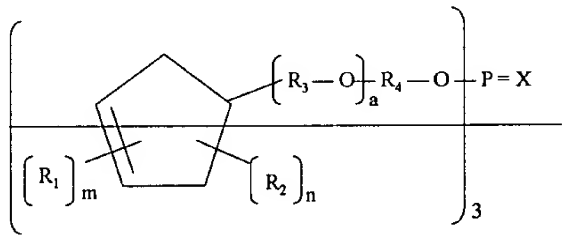
17. (Deleted) ~~The magnetic recording medium of claim 16, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

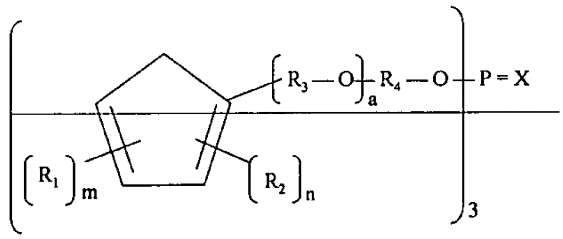


~~wherein a is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, R_4 are individually a hydrocarbyl group.~~

18. (Deleted) ~~The magnetic recording medium of claim 16, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

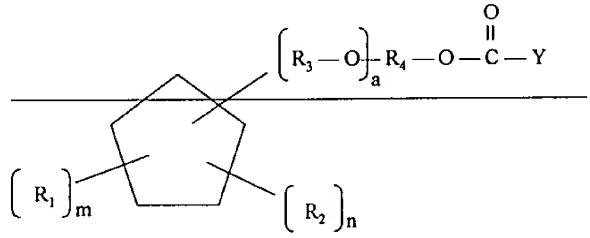


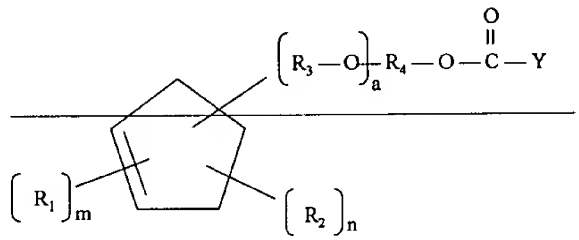


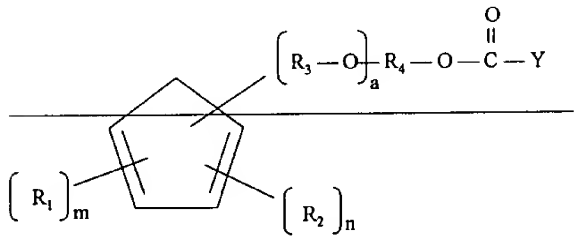


~~wherein a is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, R_3, and R_4 are individually a hydrocarbyl group; X is either oxygen or sulfur.~~

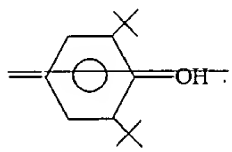
19. (Deleted) ~~The magnetic recording medium of claim 16, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~





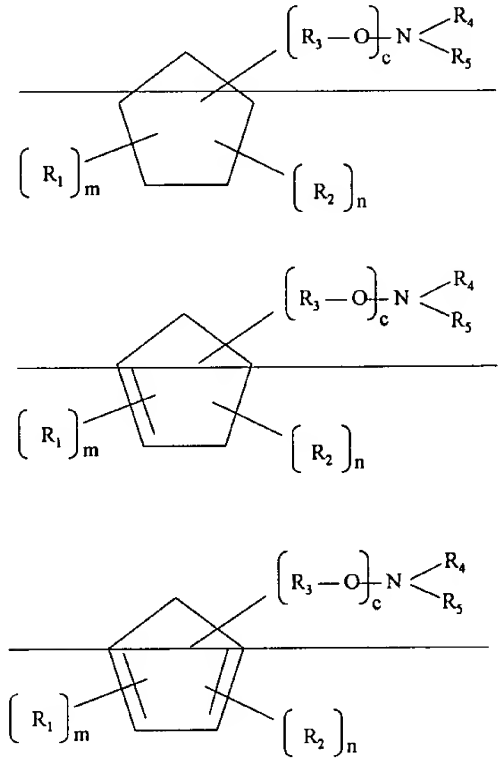


~~wherein a is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, R_3, and R_4 are individually a hydrocarbyl group; Y is -OH, -NH_2, or~~



20. (Deleted) ~~The magnetic recording medium of claim 16, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted~~

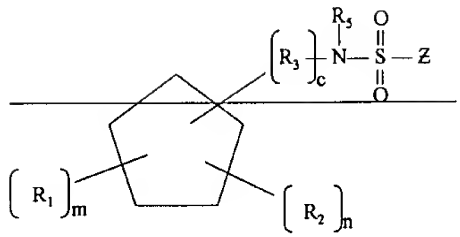
~~cyclopentadiene are represented by the following respective formulas:~~

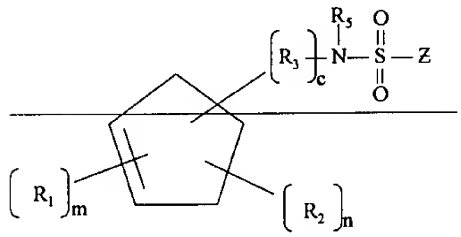


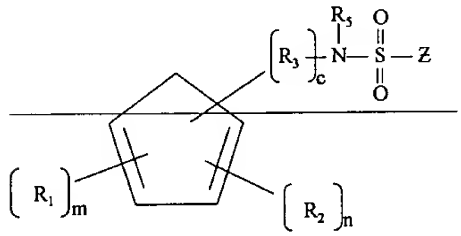
~~wherein c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, and R_3 are individually a hydrocarbyl group; R_4 and R_5 individually are hydrogen or hydrocarbyl.~~

21. (Deleted) ~~The magnetic recording medium of claim 16, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

APPENDIX A



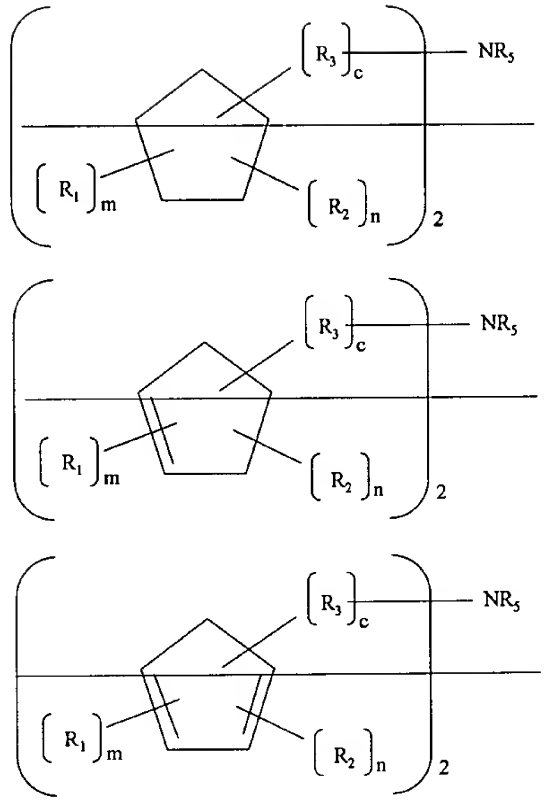




~~wherein c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10; m and n are zero or a positive integer; R_1, R_2, and R_3 are individually a hydrocarbyl group; R_5 is hydrogen or hydrocarbyl; Z is hydrocarbyl.~~

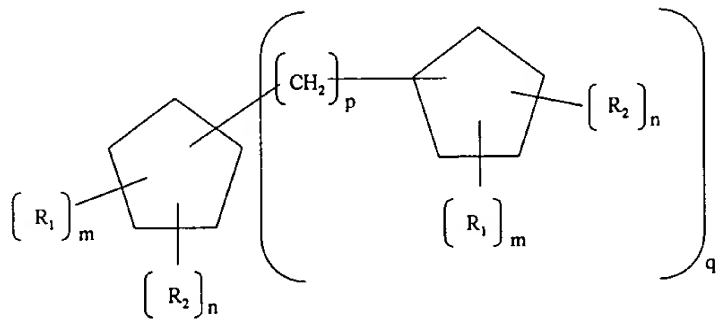
22. (Deleted) ~~The magnetic recording medium of claim 16, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:~~

APPENDIX A

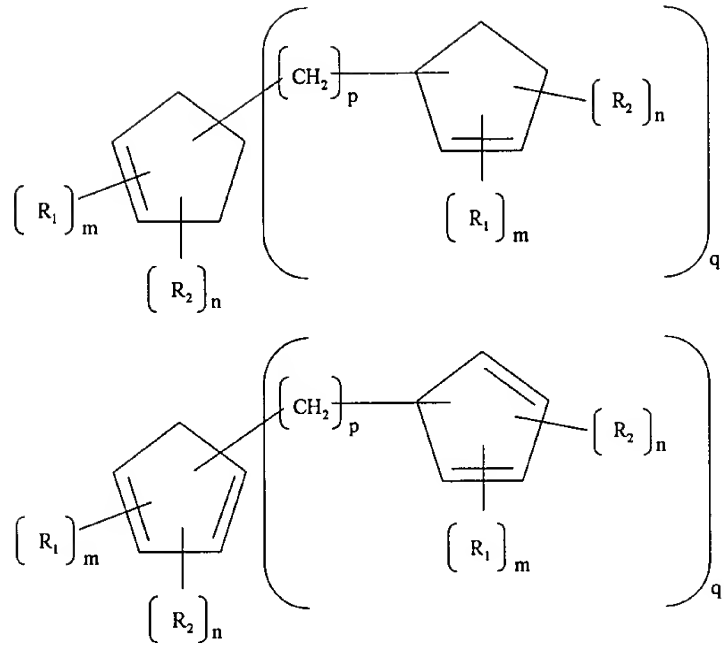


~~wherein c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, m and n are zero or a positive integer, R_1, R_2, and R_3 are individually a hydrocarbyl group; R_5 is hydrogen or hydrocarbyl.~~

23. (Twice Amended) The magnetic recording medium of claim 13 ~~16~~, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:



APPENDIX A

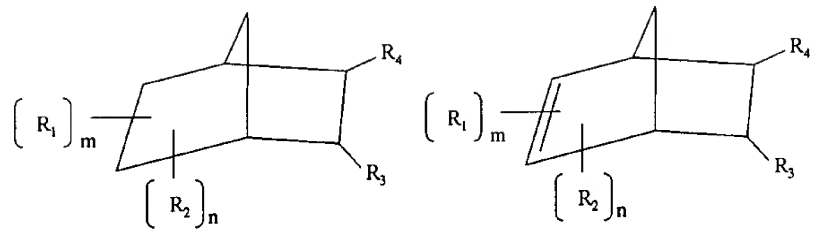


wherein p is 1, 2, 3, ..., or 10; q is 1, 2, 3, ..., or 10; m and n are zero or a positive integer; R_1 and R_2 are individually a hydrocarbyl group; and

wherein the hydrocarbyl consists of carbon and hydrogen.

24. (Twice Amended) The magnetic recording medium of claim 13 ~~16~~, wherein the hydrocarbyl-substituted cyclopentane, hydrocarbyl-substituted cyclopentene, or hydrocarbyl-substituted cyclopentadiene are represented by the following respective formulas:

APPENDIX A



wherein m and n are zero or a positive integers; R_1 and R_2 individually are a hydrocarbyl group; R_3 and R_4 individually are hydrocarbyl; ~~hydroxy, nitrile, carboxylic acid, carboxylic amide, or carboxylic ester~~ and

wherein the hydrocarbyl consists of carbon and hydrogen.

25. (Twice Amended) A magnetic head, comprising:

a head; and

a lubricant layer over at least a portion of the head, the lubricant layer including a compound selected from the group consisting of hydrocarbyl substituted cyclopentane, hydrocarbyl substituted cyclopentene, hydrocarbyl substituted cyclopentadiene, and mixtures thereof; and

wherein the hydrocarbyl consists of carbon and hydrogen.

26. (Twice Amended) A data storage/retrieval device, comprising:

a magnetic recording medium including a magnetic layer over a support and a lubricant layer over the magnetic layer, the lubricant layer including a compound selected from the group consisting of hydrocarbyl substituted cyclopentane, hydrocarbyl substituted cyclopentene, hydrocarbyl substituted cyclopentadiene, and mixtures thereof; and

a magnetic head adjacent to the magnetic recording medium, the magnetic head sliding on the magnetic recording medium to read and write information on the magnetic recording medium; and

wherein the hydrocarbyl consists of carbon and hydrogen.

29. (Twice Amended) A computer, comprising:

a CPU;

a disk drive connected to the CPU so that the disk drive can communicate with the CPU, the disk drive including:

a magnetic recording medium having a magnetic layer over a support and a lubricant layer over the magnetic layer, the lubricant layer having a compound selected from the group consisting of hydrocarbyl substituted cyclopentane, hydrocarbyl substituted cyclopentene, hydrocarbyl substituted cyclopentadiene, and mixtures thereof; and

a magnetic head adjacent to the magnetic recording medium, the magnetic head sliding on the magnetic recording medium to read and write information on the magnetic recording medium; and

wherein the hydrocarbyl consists of carbon and hydrogen.

30. (Twice Amended) A method of manufacturing a magnetic recording medium, comprising:

providing a non-magnetic support;

forming a magnetic layer on the support; and

forming a lubricant layer over the magnetic layer, the lubricant layer including a compound selected from the group consisting of hydrocarbyl substituted cyclopentane, hydrocarbyl substituted cyclopentene, hydrocarbyl substituted cyclopentadiene, and mixtures thereof; and

wherein the hydrocarbyl consists of carbon and hydrogen.